

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: : Confirmation No.: 3032  
Willi Kreuder *et al.* :  
 : Group Art Unit: 2828  
Serial No. 09/601434 :  
 :  
Filing Date: September 1, 2000 : Examiner: Nguyen, D.T.  
 :  
For: USE OF SPIRO COMPOUNDS :  
AS LASER DYES :

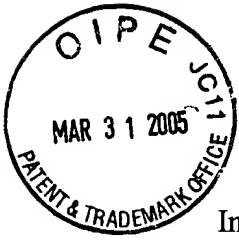
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Ashley I. Pezzner  
CONNOLLY BOVE LODGE & HUTZ LLP  
Reg. No. 35,646  
P.O. Box 2207  
Wilmington, DE 19899  
(302) 888-6270

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**APPEAL BRIEF**

**I. THE REAL PARTY OF INTEREST**

Celanese Ventures GmbH is the real party of interest. The application was assigned and recorded on April 7, 2003, on Reel No. 013932 and Frame No. 0219.

**II. RELATED APPEALS AND INTERFERENCES**

The undersigned is not aware of any related appeals or interferences involving this application.

**III. THE STATUS OF THE CLAIMS**

Claims 1-20, 22-24, 28, 30 have been cancelled. Claims 21, 25-27, 29 and 31-35 are pending. The subject of the appeal are claims 21, 25-27, 29 and 31-35 which are attached in Appendix I.

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#### **IV. STATUS OF AMENDMENTS AFTER FINAL**

Applicant filed an Amendment After Final Action on December 13, 2004. The Examiner indicated on the Advisory Action mailed January 11, 2005, that the amendment would be entered upon filing an Appeal Brief.

#### **V. SUMMARY OF THE INVENTION**

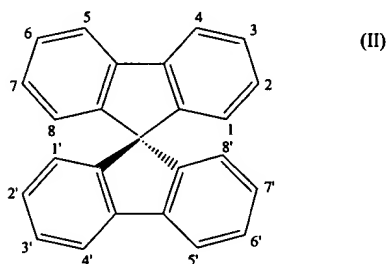
The application has two independent claims (claims 21 and 27).

Claim 21 states,

A laser comprising: in order,

a substrate,

an organic layer structure comprising an organic solid laser dye comprising a spiro compound of formula II

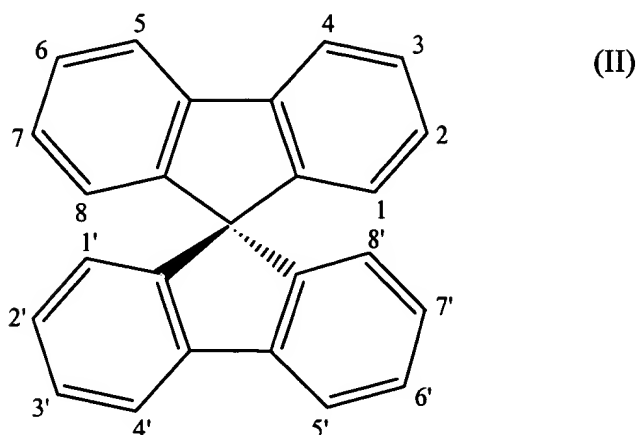


where the benzo groups can be substituted and/or fused independently of one another (see page 3, lines 11-15 and page 15, lines 11-15 of the specification).

The other independent claim 27 states:

A method of producing coherent laser emission comprising subjecting an organic solid laser dye to a light source wherein said light source excites the organic solid laser dye to emit radiation, the organic solid laser dye comprising a solid

spirobifluorene of formula (II)



where the benzo groups can be substituted and/or fused independent of one another (see page 1, lines 12-15, page 3, lines 11-15 and page 15, lines 4-6 of the specification).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. Whether claims 21-32 are rejectable under 35 U.S.C. 103(a) as being unpatentable over Moses U.S. Patent No. 5,237,582 ("Moses") in view of Lupo et al. European Patent No. 0676461 A2 ("Lupo")?

2. Whether Moses is combinable with Lupo, in view of the fact that Moses teaches that the conductive polymer must be of a specific formula IV or V?

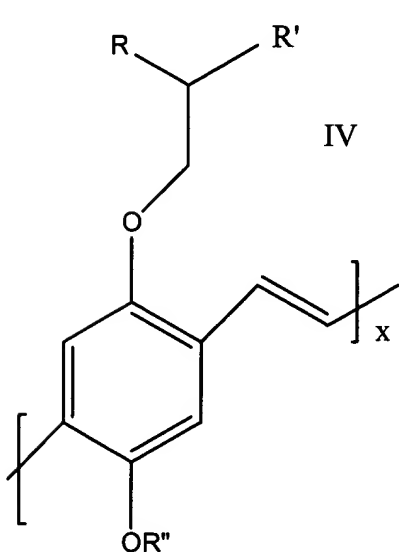
## **VII. ARGUMENTS**

The Examiner correctly stated at page 2 of the Final Office Action mailed September 24, 2004, that Moses lacks the spiro dye of formula (1). However, Moses

teaches a specific dye of having the following chemical formulas IV or V. In Fact,

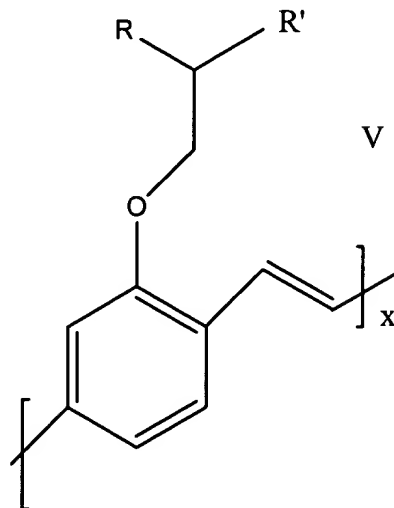
Moses states that the laser dye comprises a laser dye solution comprising a

“conductive polymer having the chemical formula



MEH-PPV

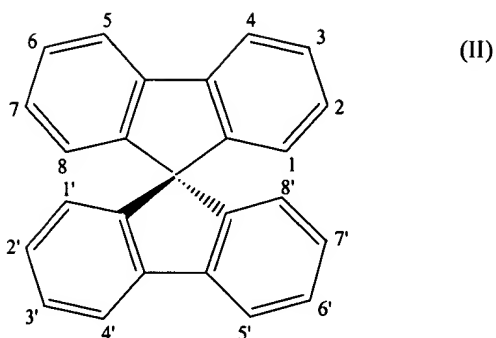
or



EH-PPV

”.

See the abstract; col. 4, lines 30-50 under the heading of Summary of the Invention; col. 5, lines 1-30 and 45-67; col. 7, lines 25-50 under the heading of Description of the Preferred Embodiments In Relation To The Drawings; col. 11 line 54 through col. 12, line 12; col. 13, lines 27-50; and claim 1. Clearly, the polymers of formula (IV) or (V) are the only conductive polymer contemplated by Moses. Furthermore at col. 8 lines 10-34; Moses stated that the conductive polymer useful according to the invention have the chemical formula of formula (IV) and (V). Again, these formulas are not remotely related to the applicant's claimed spiro dye of the formula (II).



There is no suggestion or teaching in Moses to use any other dye then the two dyes described above.

It is acknowledged that Lupo discloses the applicant's claimed dyes. It is also acknowledged that Joeseef Salebeck and Willi Kreuder are named inventors in both this application and Lupo.

The Examiner must consider the references as a whole, In re Yates, 211 USPQ 1149 (CCPA 1981). The Examiner cannot selectively pick and choose from the disclosed multitude of parameters **without any direction** as to the particular one selection of the reference **without proper motivation**. The mere fact that the prior art may be modified to reflect features of the claimed invention does not make modification, and hence claimed invention, obvious **unless the prior art suggested the desirability of such modification** is suggested by the prior art (In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984); In re Baird, 29 USPQ 2d 1550 (CAFC 1994) and In re Fritch, 23 USPQ 2nd. 1780 (Fed. Cir. 1992)). In re Gorman, 933 F.2d 982, 987, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991) (in a determination under 35 U.S.C. § 103 it is impermissible to simply engage in a hindsight reconstruction of the claimed invention; the references themselves must provide some teaching whereby the applicant's combination would have been obvious); In re Dow Chemical Co., 837 F.2d 469,473, 5

USPQ2d 1529, 1531 (Fed. Cir. 1988) (under 35 U.S.C. § 103, both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure). The applicants disagree with the Examiner why one skilled in the art with the knowledge of the references would selectively modify the references in order to arrive at the applicants' claimed invention. The Examiner's argument is clearly based on hindsight reconstruction.

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching, suggestion, or incentive supporting this combination, although it may have been obvious to try various combinations of teachings of the prior art references to achieve the applicant's claimed invention, such evidence does not establish prima facie case of obviousness (In re Geiger, 2 USPQ 2d. 1276 (Fed. Cir. 1987)). There would be no reason for one skilled in the art to combine Moses and Lupo.

#### **VIII. CONCLUSION**

It is believed that the claims define an invention which is new, useful, and unobvious. For the above reasons, the Applicant request passage to allowance. This brief is being submitted in triplicate. The PTO is authorized to charge Deposit Account No. 03-2775 the amount of \$500.00. The Notice of Appeal was filed on January 24, 2005. A one-month extension has been filed.

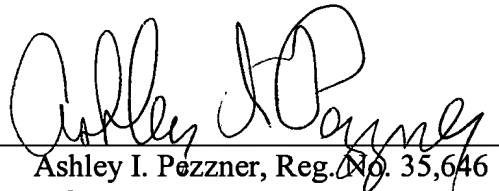


However, in the event that the undersigned is mistaken in his calculations, an appropriate extension of time to respond is respectfully petitioned for, and the Commissioner is hereby authorized to charge the account of the undersigned attorneys, Patent Office Deposit Account No. 03-2775, for any fees which may be due upon the filing of this paper.

Respectfully submitted,

CONNOLLY BOVE LODGE & HUTZ LLP

By

A handwritten signature in black ink, appearing to read "Ashley I. Pezzner", is written over a horizontal line.

Ashley I. Pezzner, Reg. No. 35,646

P.O. Box 2207

Wilmington, DE 19899

(302) 888-6270

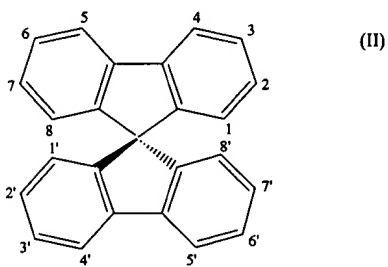
**APPENDIX I**

1-20 cancelled

21. A laser comprising: in order,

a substrate,

an organic layer structure comprising an organic solid laser dye comprising a spiro compound of formula II



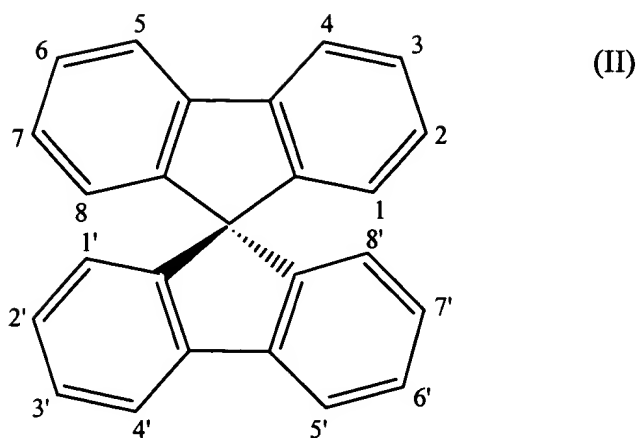
where the benzo groups can be substituted and/or fused independently of one another.

22-24 cancelled

25. The laser of claim 21, which further comprises a light source selected from the group consisting of a flash lamp and a laser.

26. The laser of claim 25, wherein the light source is a laser.

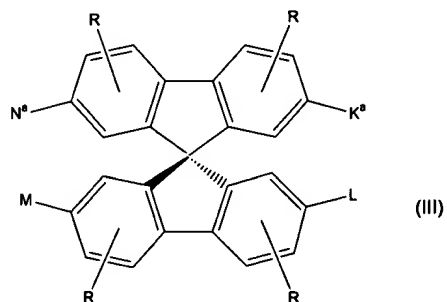
27. A method of producing coherent laser emission comprising subjecting an organic solid laser dye to a light source wherein said light source excites the organic solid laser dye to emit radiation, the organic solid laser dye comprising a solid spirobifluorene of formula (II)



where the benzo groups can be substituted and/or fused independent of one another.

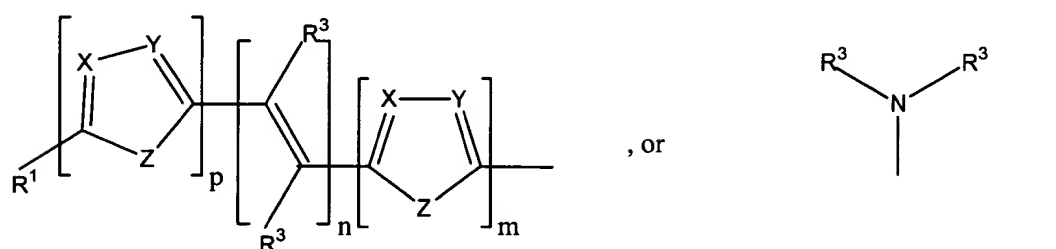
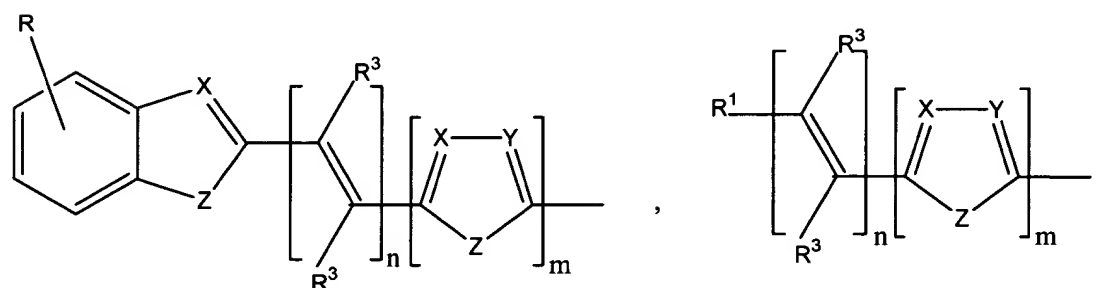
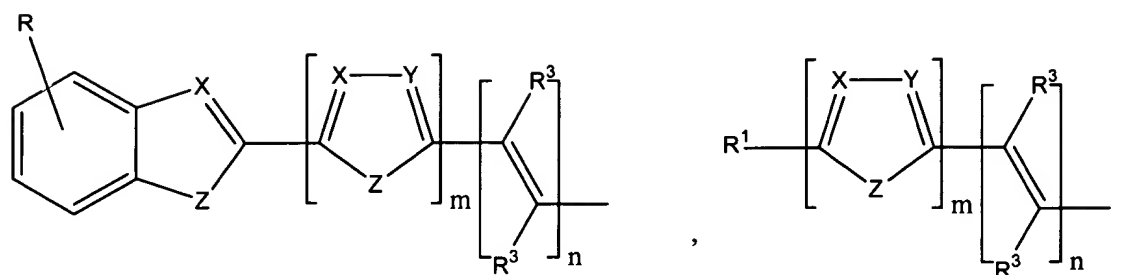
28 cancelled

29. The method of claim 27, wherein said spiro compound is a spirobifluorene derivative of formula (III)



wherein:

$K^a$ , L, M,  $N^a$  are identical or different and are



R is identical or different and has the same meaning as  $K^a$ , L, M,  $N^a$  or is H, a

linear or branched alkyl, alkoxy or ester group having from 1 to 22 carbon atoms,

$$-\text{CN}, -\text{NO}_2, \quad -\text{NR}^2\text{R}^3, -\text{Ar} \text{ or } -\text{O}-\text{Ar};$$

Ar is phenyl, biphenyl, 1-naphthyl, 2-naphthyl, 2-thienyl, or 2-furyl, with each

optionally substituted with one or two radicals R;

$m, n, p$  are 0, 1, 2 or 3;

X, Y are identical or different and are CR or nitrogen;

Z is -O-, -S-, -NR<sup>1</sup>-, -CR<sup>1</sup>R<sup>4</sup>-, -CH=CH-, or -CH=N-;

$R^1$ ,  $R^4$  are identical or different and have the same meaning as R; and

$R^2$ ,  $R^3$  are identical or different and are H, a linear or branched alkyl group having from 1 to 22 carbon atoms, -Ar, or 3-methylphenyl.

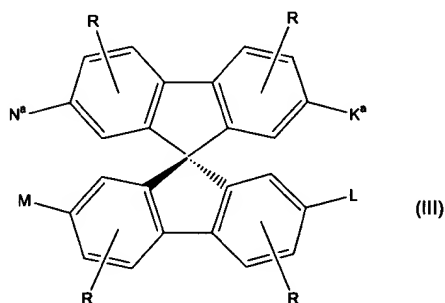
30 cancelled

31. The method of claim 27 wherein the light source is a laser or a flash lamp.

32. The method of claim 31 wherein the light source is a laser.

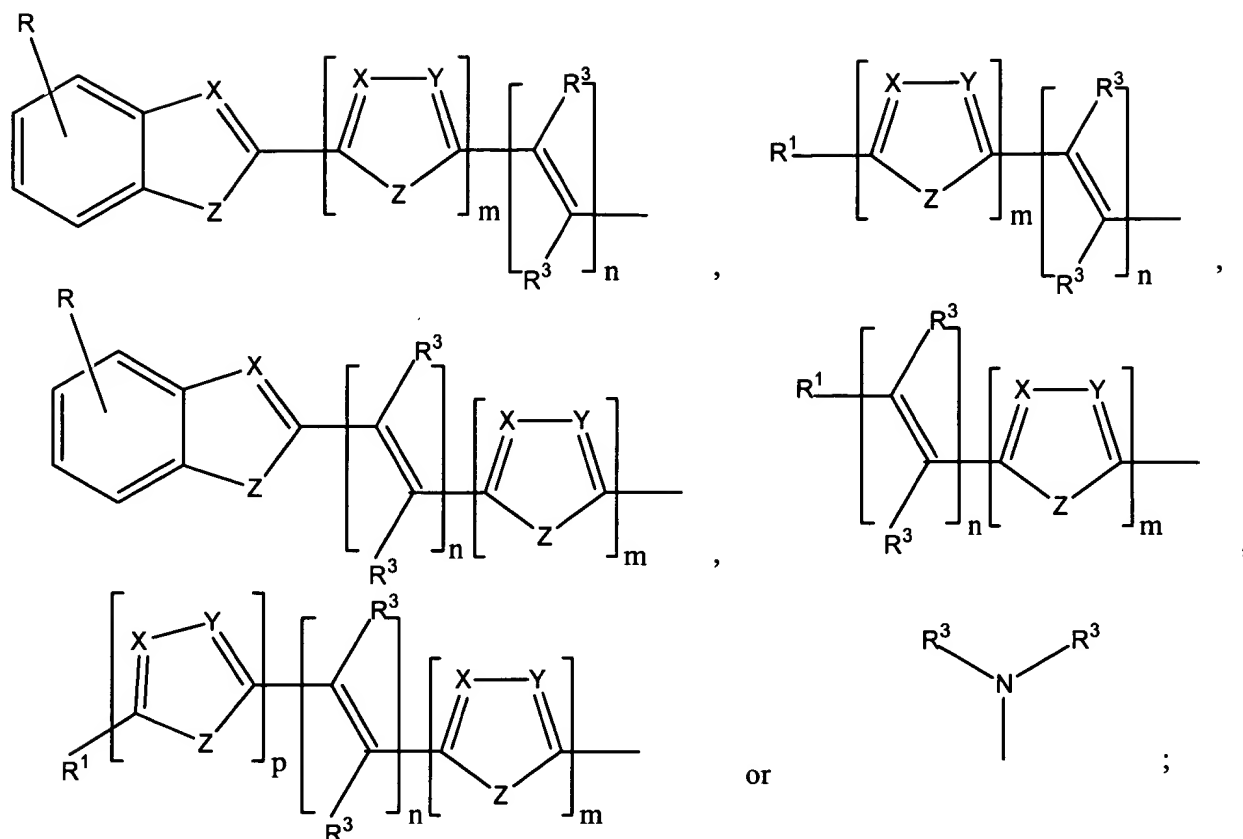
33. The laser of claim 21, wherein said spiro compound is a spirobifluorene derivative of

formula (III)



wherein:

$K^a$ , L, M,  $N^a$  are identical or different and are



R is identical or different and has the same meaning as K<sup>a</sup>, L, M, N<sup>a</sup> or is H, a linear or branched alkyl, alkoxy or ester group having from 1 to 22 carbon atoms, -CN, -NO<sub>2</sub>, -NR<sup>2</sup>R<sup>3</sup>, -Ar or -O-Ar;

Ar is phenyl, biphenyl, 1-naphthyl, 2-naphthyl, 2-thienyl, or 2-furyl, with each optionally substituted with one or two radicals R;

m, n and p independently are 0, 1, 2 or 3;

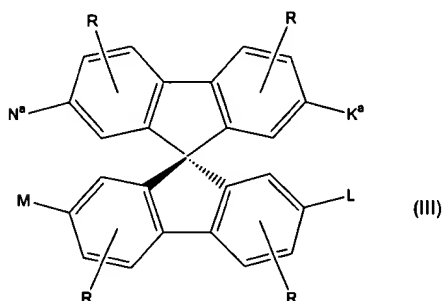
X and Y independently are identical or different and are CR or nitrogen;

Z is -O-, -S-, -NR<sup>1</sup>-, -CR<sup>1</sup>R<sup>4</sup>-, -CH=CH-, or -CH=N-;

R<sup>1</sup> and R<sup>4</sup> are identical or different and have the same meaning as R; and

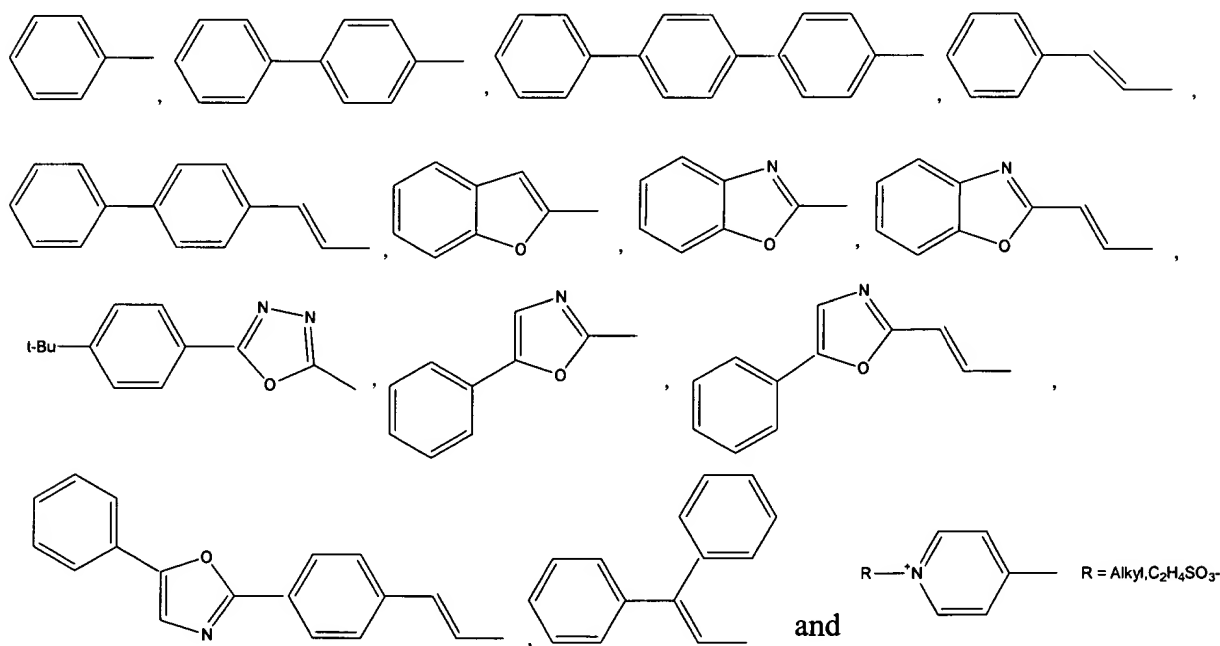
R<sup>2</sup> and R<sup>3</sup> are identical or different and are H, a linear or branched alkyl group having from 1 to 22 carbon atoms, -Ar, or 3-methylphenyl.

34. The laser of claim 21, wherein said spiro compound is a spirobifluorene compound selected from the group consisting of the spirobifluorene compounds of the formula (IIIa) to (IIIg), wherein formula (III) is:

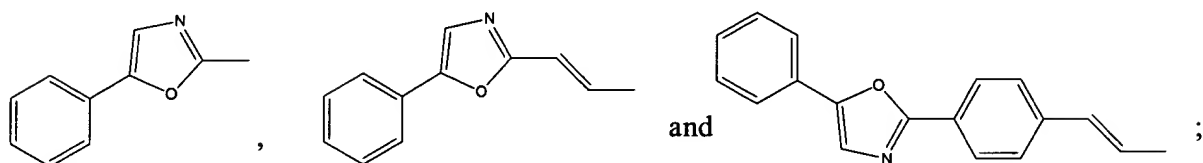
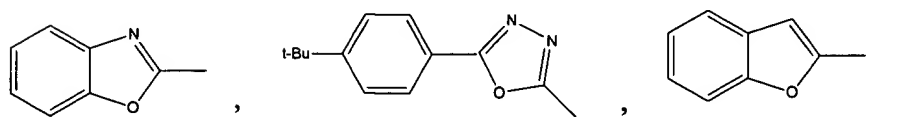
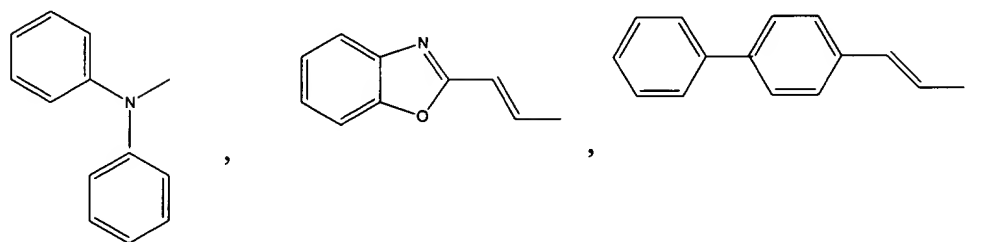
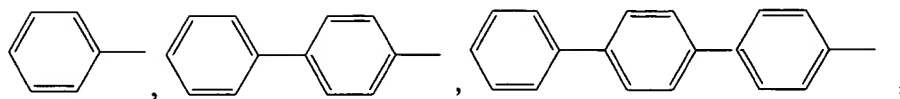


and the spirobifluorene compounds (IIIa to IIIg) are derivatives of formula (III) as follows:

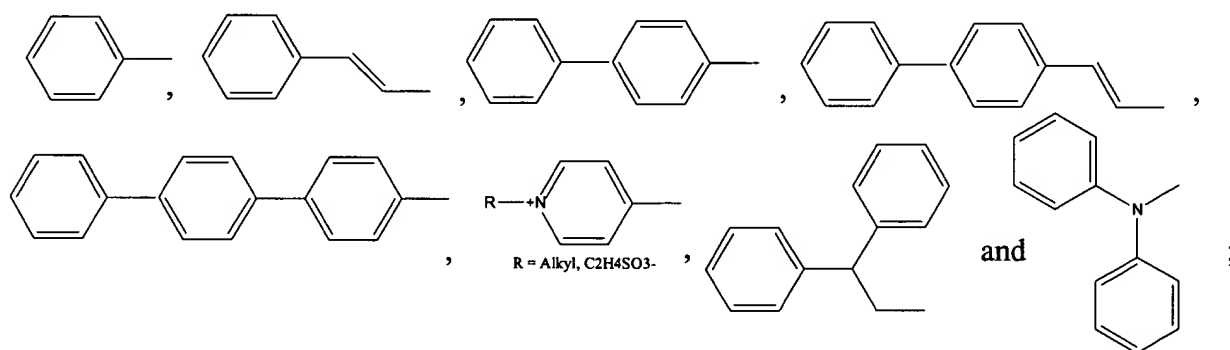
IIIa)  $K^a = L = M = N^a$  and is selected from the group consisting of:



IIIb)  $K^a = M = H$  and  $N^a = L$  and is selected from the group consisting of:

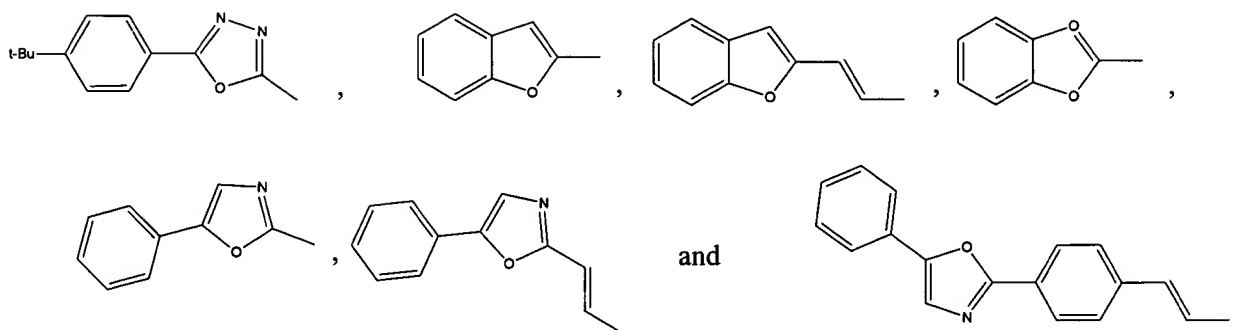


IIIc)  $K^a = M$  and is selected from the group consisting of:

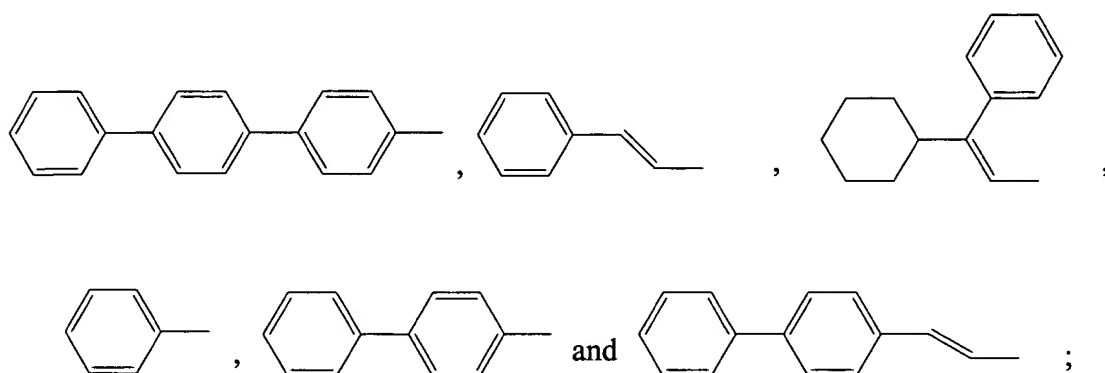


and  $N^a = L$  and is selected from the group consisting of:

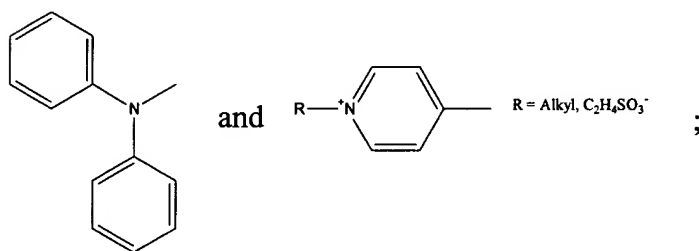




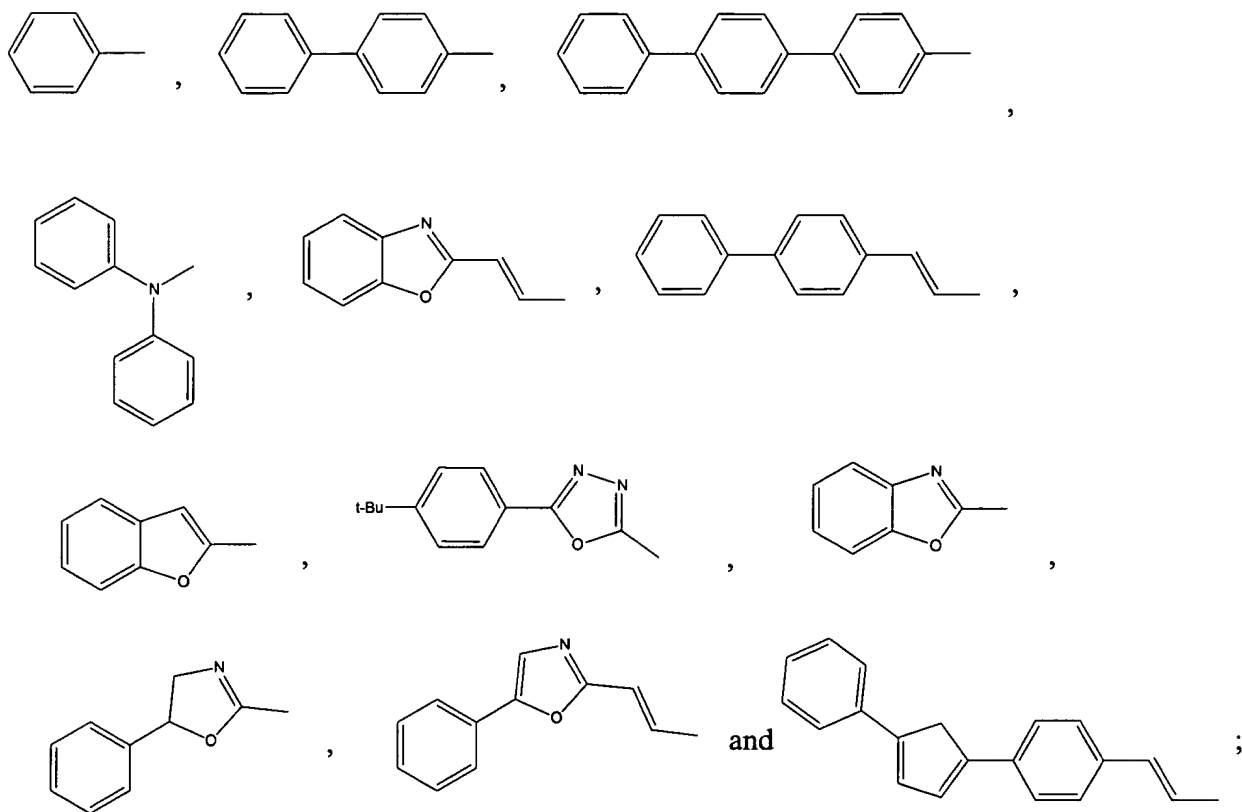
IIIId)  $K^a = M$  and is selected from the group consisting of:



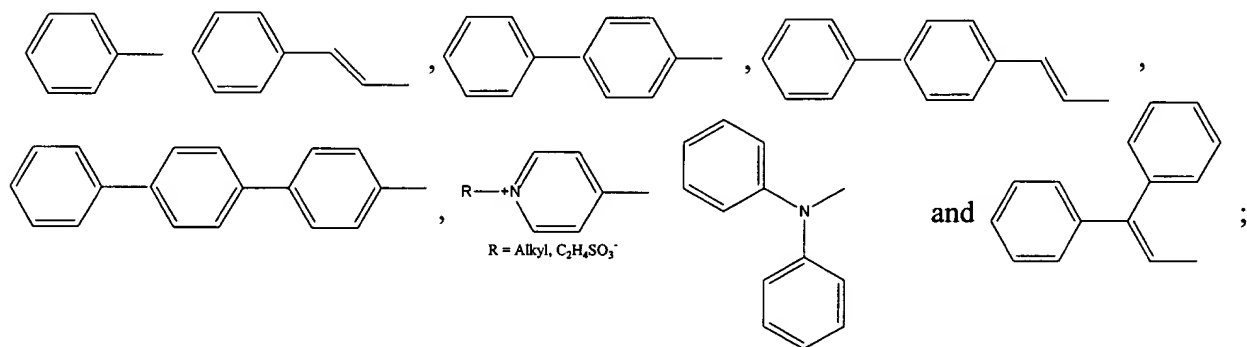
and  $N^a = L$  and is selected from the group consisting of:



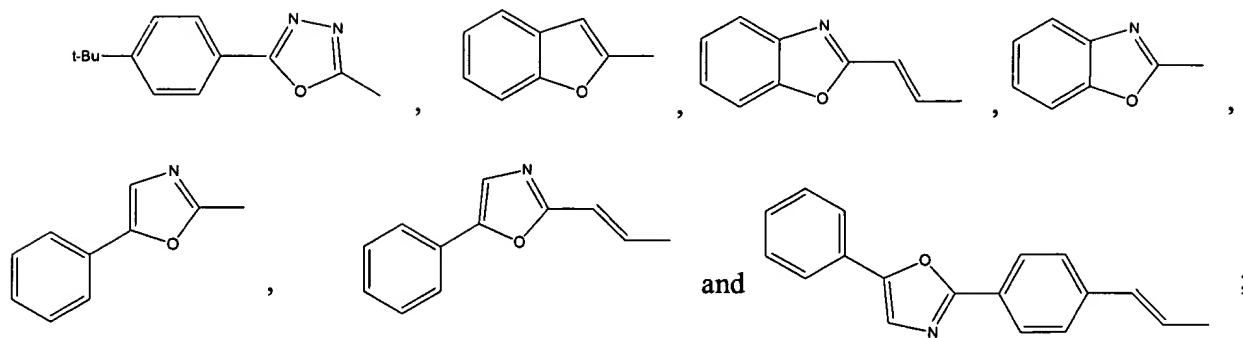
IIIe)  $K^a = L = H$  and  $M = Na$  and is selected from the group consisting of:



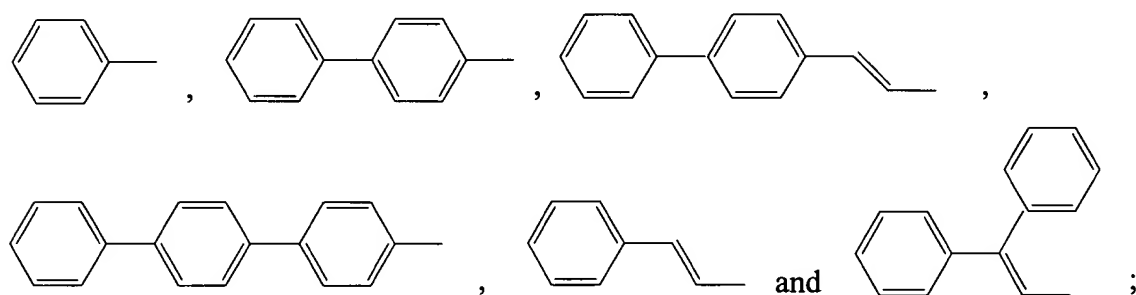
III f)  $K_a = L$  and is selected from the group consisting of:



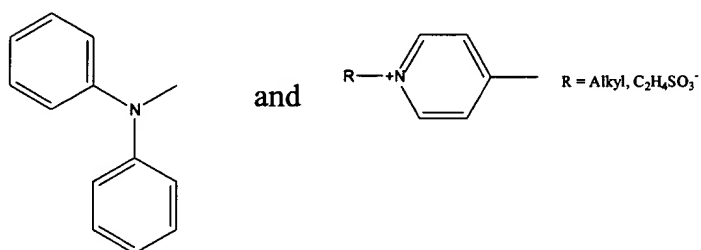
and  $M = N^a$  and is selected from the group consisting of:



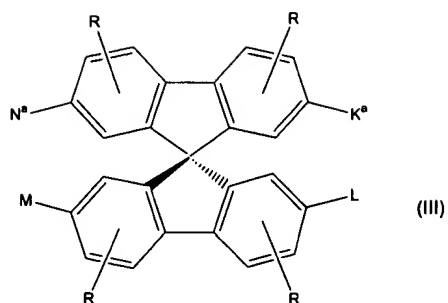
IIIg)  $K^a = L$  and is selected from the group consisting of:



and  $M = N^a$  and is selected from the group consisting of:

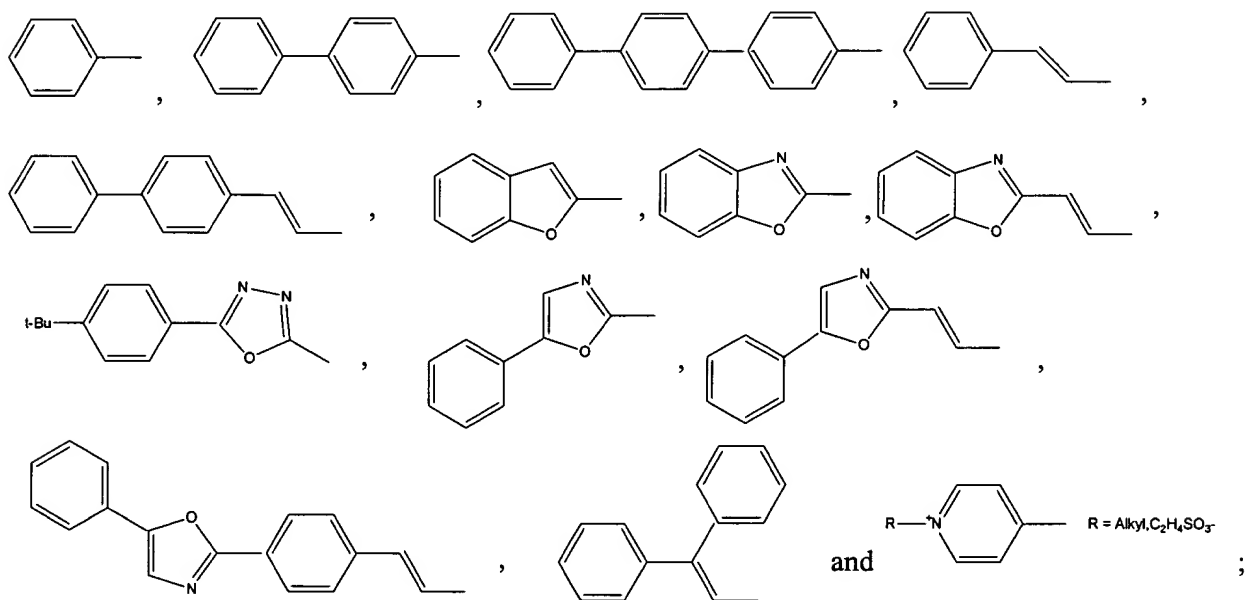


35. The method of claim 27, wherein said spiro compound is a spirobifluorene compound selected from the group consisting of the spirobifluorene compounds of the formula (IIIa) to (IIIg), wherein formula (III) is:

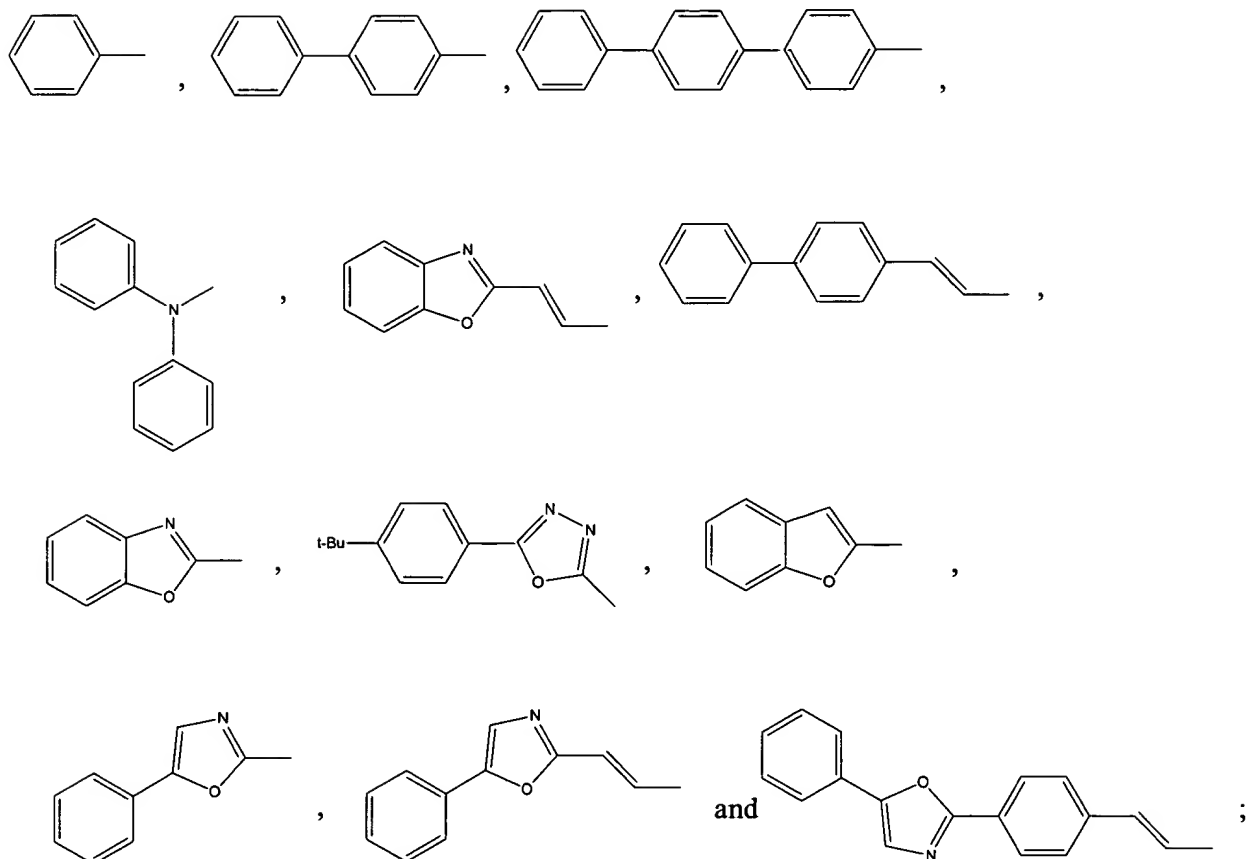


and the spirobifluorene compounds (IIIa to IIIg) are derivatives of formula (III) as follows:

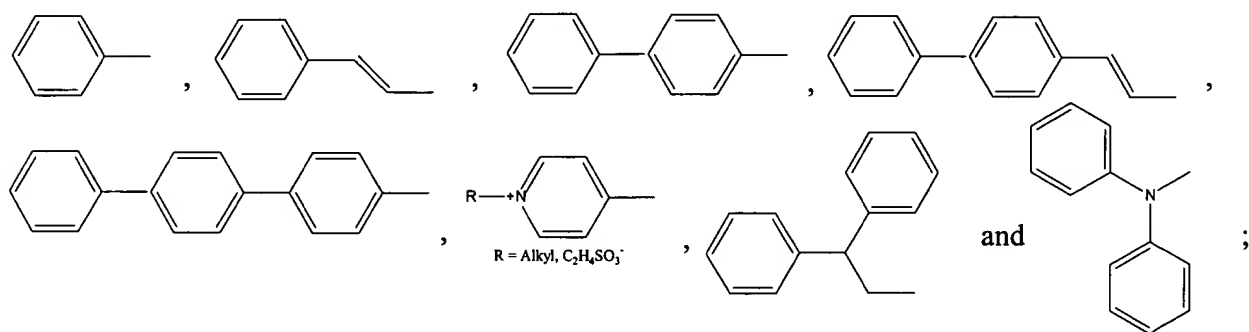
IIIa)  $K^a = L = M = Na$  and is selected from the group consisting of:



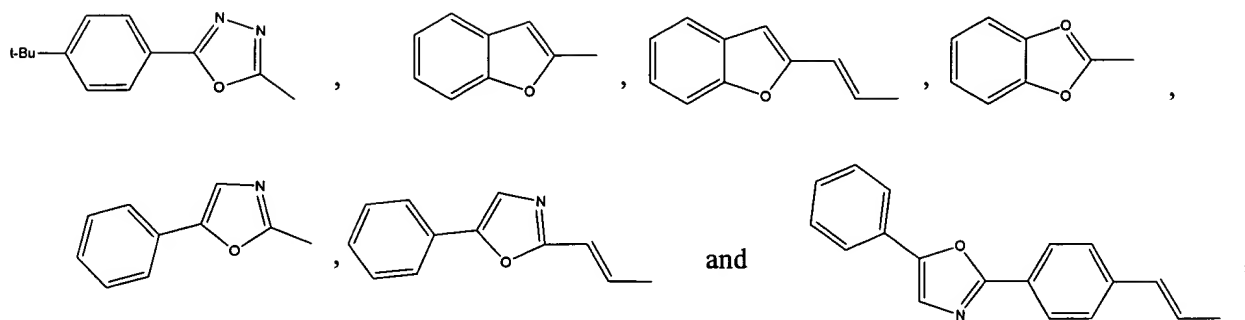
IIIb)  $K^a = M = H$  and  $Na = L$  and is selected from the group consisting of:



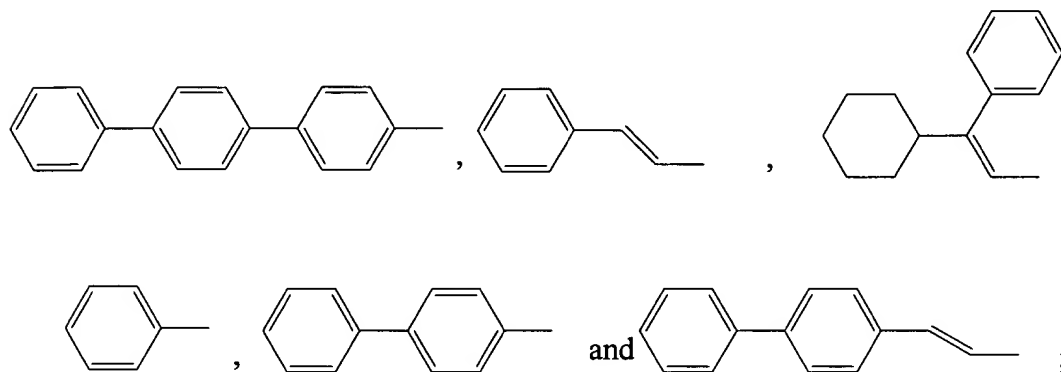
IIIc)  $K^a = M$  and is selected from the group consisting of:



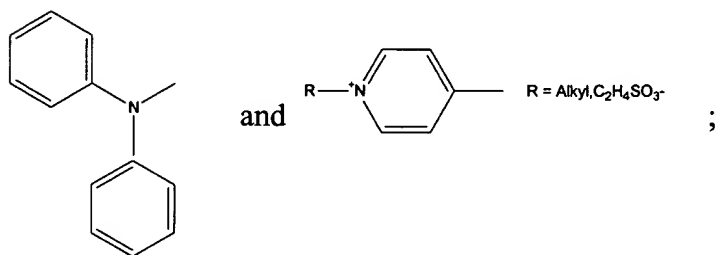
and  $N^a = L$  and is selected from the group consisting of



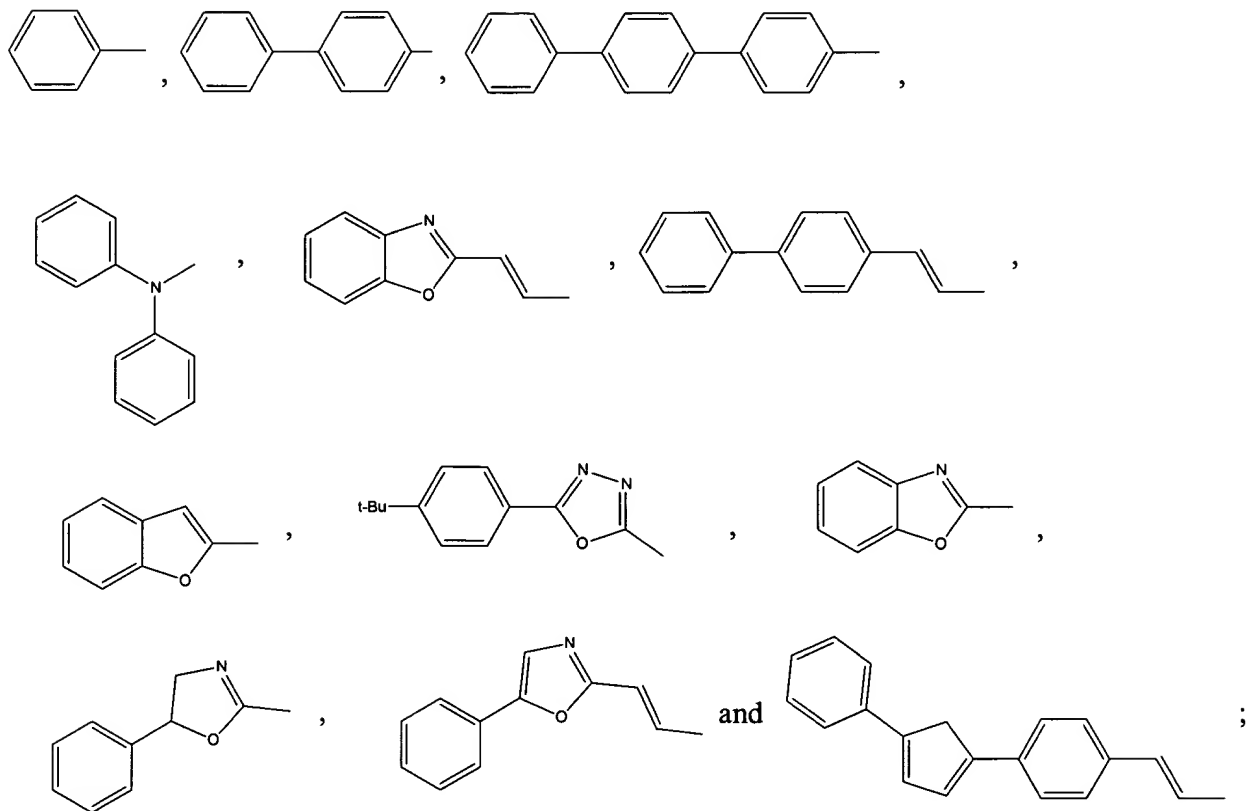
IIIId)  $K^a = M$  and is selected from the group consisting of:



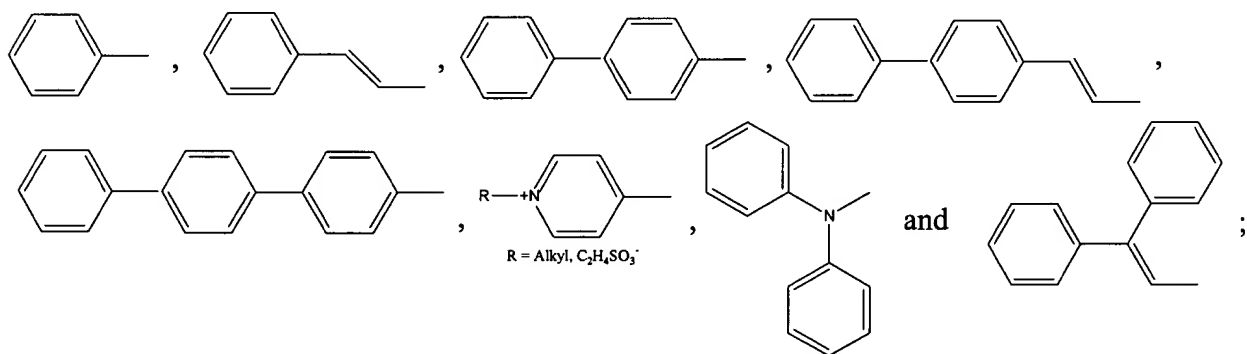
and  $N^a = L$  and is selected from the group consisting of:



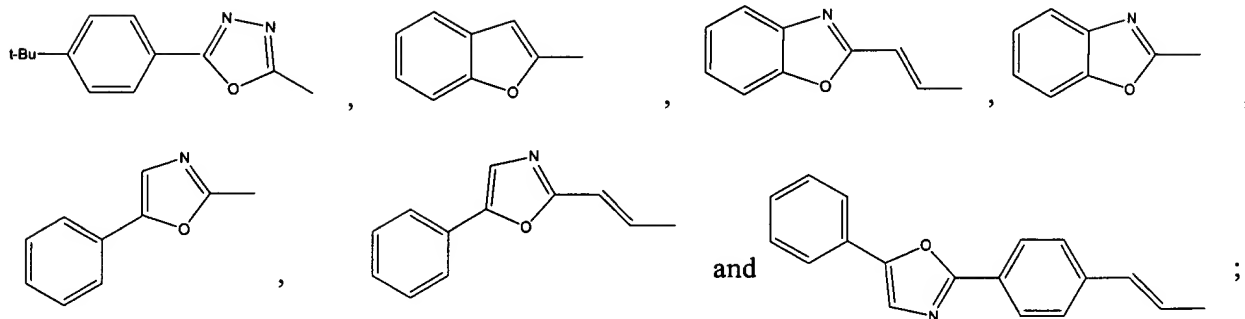
IIIe)  $K^a = L = H$  and  $M = N^a$  and is selected from the group consisting of:



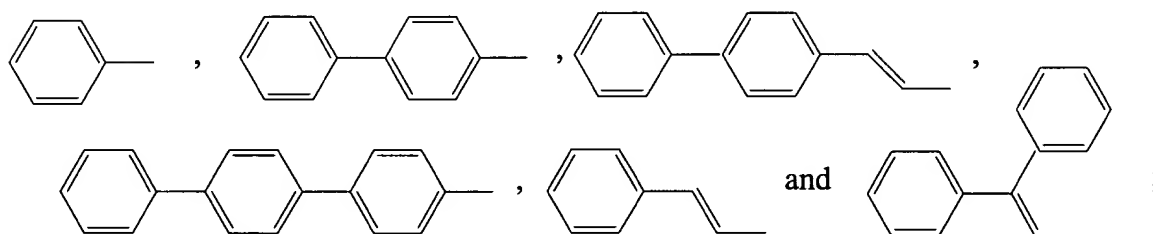
III f)  $K^a = L$  and is selected from the group consisting of:



and  $M = N^a$  and is selected from the group consisting of



IIIg)  $K^a = L$  and is selected from the group consisting of:



and  $M = N^a$  and is selected from the group consisting of:

